

appropriate), shall evolve from being separate support functions into being an integral part of the platform's information architecture. The PM shall consider design options and emerging training technologies that can improve the users' performance and readiness, and reduce individual, collective, and joint training costs. The PM shall maximize simulation-supported embedded training. Training systems shall fully support and mirror the interoperability of the operational system. The PM shall base training decisions on training effectiveness evaluations (see DoD Directive 1430.13 (reference (v))). The PM shall document manpower and training requirements as soon as possible after program initiation.

C5.2.3.5.10. Environment, Safety, and Occupational Health (ESOH)

C5.2.3.5.10.1. All programs, regardless of acquisition category and throughout their life cycle, shall comply with this section. The PM shall ensure a system design that can be tested, operated, maintained, repaired, and disposed of in accordance with ESOH statutes, regulations, policies, and, as applicable, environmental treaties and agreements (collectively termed regulatory requirements) and the requirements of this section.

C5.2.3.5.10.2. The PM shall prepare a PESHE document early in the program life cycle (usually Milestone B). The PESHE shall identify ESOH risks, contain a strategy for integrating ESOH considerations into the systems engineering process, delineate ESOH responsibilities, and provide a method for tracking progress. The PM shall use the PESHE to identify and manage ESOH hazards, and to determine how to best meet ESOH regulatory requirements. The PM shall keep the PESHE updated over the system life cycle.

C5.2.3.5.10.3. The PM shall conduct ESOH analyses as described below. The PM shall provide details of these analyses, including supporting documentation, as part of the IPPD.

C5.2.3.5.10.4. ESOH Compliance. To minimize the cost and schedule risks over the system's life cycle that changing ESOH requirements and regulations represent, the PM shall regularly review ESOH regulatory requirements and evaluate their impact on the program's life-cycle cost, schedule, and performance.

C5.2.3.5.10.5. National Environmental Policy Act (NEPA). The PM is responsible for and shall comply with the NEPA (42 U.S.C. 4321-4370d (reference (fff))) and implementing regulations, 40 C.F.R. 1500-1508 (reference (cccc)), and E.O. 12114 (reference (ggg)), as applicable. The PM shall complete any analysis and documentation required under either NEPA or E.O. 12114 before the appropriate official may make a decision to proceed with a proposed action that may affect the human environment. The PM shall document the decision before implementing the proposed action. The PM shall include an appropriate completion schedule for NEPA and E.O. 12114 compliance in the acquisition strategy. The PM shall prepare NEPA and E.O. 12114 documentation in accordance with the DoD Component

implementation regulations and guidance. The CAE (or, for joint programs, the CAE of the Lead Executive Component), or designee, is the final approval authority for system-related NEPA and E.O. 12114 documentation. The PM shall forward a copy of final NEPA documentation to the Defense Technical Information Center for archiving.

C5.2.3.5.10.6. Safety and Health

C5.2.3.5.10.6.1. The PM shall identify and evaluate safety and health hazards, define risk levels, and establish a program that manages the probability and severity of all hazards associated with development, use, and disposal of the system. The PM shall use and require contractors to use the industry and DoD standard practice for system safety, consistent with mission requirements. This standard practice manages risks encountered in the acquisition life cycle of systems, subsystems, equipment, and facilities. These risks include conditions that create significant risks of death, injury, acute/chronic illness, disability, and/or reduced job performance of personnel who produce, test, operate, maintain, support, or dispose of the system.

C5.2.3.5.10.6.2. The following policy applies to the acceptance of risk:

C5.2.3.5.10.6.2.1. The PM shall formally document each management decision accepting the risk associated with an identified hazard.

C5.2.3.5.10.6.2.2. “High Risk” hazards shall require CAE approval (Lead Executive Component authority prevails for joint programs).

C5.2.3.5.10.6.2.3. The acceptance of all risks involving explosives safety (see subparagraph C5.2.3.5.10.9.) shall require the appropriate risk acceptance authority to consult with the DoD Component’s technical authority managing the explosives safety program.

C5.2.3.5.10.6.2.4. “Serious Risk” hazards shall require PEO approval.

C5.2.3.5.10.6.2.5. “Medium Risk” and “Low Risk” hazards shall require PM approval.

C5.2.3.5.10.6.3. Pub. L. 91-596 (1990) (reference(dddd)) makes Federal Occupational Safety and Health Act standards and regulations applicable to all federal (military or civilian) and contractor employees working on DoD acquisition contracts or in DoD operations and workplaces. In the case of military-unique equipment, systems, operations, or workplaces, Federal safety and health standards, in whole or in part, shall apply to the extent practicable.

C5.2.3.5.10.7. Hazardous Materials Management

C5.2.3.5.10.7.1. The PM shall establish a hazardous material management program consistent with eliminating and reducing the use of hazardous materials in processes and products (E.O. 13148 (reference (eeee))). The PM shall evaluate and manage the selection, use, and disposal of hazardous materials consistent with ESOH regulatory requirements and program cost, schedule, and performance goals. Where the PM cannot avoid using a hazardous material, he or she shall develop and implement plans and procedures for identifying, minimizing use of, tracking, storing, handling, packaging, transporting, and disposing of such material.

C5.2.3.5.10.7.2. As alternate technology becomes available, the PM shall replace hazardous materials in the system through changes in the system design, manufacturing, and maintenance processes, where technically and economically practicable. To minimize costs, the PM shall, whenever possible, work with the contractor and other PMs to identify and test mutually acceptable alternatives. DCMA shall coordinate this effort at contractor facilities under its cognizance. Where the Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIP) provides contract management, the PM shall coordinate with SUPSHIP. The Contract Management Office, working in conjunction with the PM and IPT, shall help identify technical requirements, coordinate PM funding strategies, administer evaluation activities, and implement solutions.

C5.2.3.5.10.8. Pollution Prevention

C5.2.3.5.10.8.1. The PM shall identify and evaluate environmental and occupational health hazards and establish a pollution prevention program. The PM shall identify the impacts of the system on the environment during its life (including disposal), the types and amounts of pollution from all sources (air, water, noise, etc.) that will be released to the environment, actions needed to prevent or control the impacts, ESOH risks associated with using the new system, and other information needed to identify source reduction, alternative technologies, and recycling opportunities. The pollution prevention program shall serve to minimize system impacts on the environment and human health, as well as environmental compliance impacts on program TOC. A fundamental purpose of the pollution prevention program is to identify and quantify impacts, such as noise, as early as possible during system development, and to identify and implement actions needed to prevent or abate the impacts.

C5.2.3.5.10.8.2. In developing contract documents such as work statements, specifications, and other product descriptions, PMs shall eliminate the use of virgin material requirements, as practicable. They shall consider using recovered materials and reusable products. They shall further consider life-cycle costs, recyclability, the use of environmentally preferable products, waste prevention (including toxicity reduction or

elimination), and disposal, as appropriate. (FAR 11.002 and E.O. 13101 (references(ffff) and (gggg)))

C5.2.3.5.10.9. Explosives Safety. All acquisition programs that include or support munitions, explosives, or energetics shall comply with DoD explosives safety requirements. The PM shall establish an explosives safety program that ensures that munitions, explosives, and energetics are properly hazard classified, and safely developed, manufactured, tested, transported, handled, stored, maintained, demilitarized, and disposed. The PM shall evaluate and manage the use and selection of energetic materials and the design of munitions and explosive systems to reduce the possibility and the consequences of any munitions or explosives mishap and to optimize the trade-off of munitions reliability against unexploded ordnance liability.

C5.2.3.5.11. Interoperability. All acquisition programs shall satisfactorily address interoperability and integration. Users shall specify, and the appropriate authority shall validate, thresholds and objectives during the requirements generation process. The Joint Staff shall certify interoperability requirements. These requirements shall span the complete acquisition life cycle for all acquisition programs. Interoperability and supportability of IT acquisition program systems, including NSS, shall comply with DoD Directive 4630.5 (reference(hhhh)), DoD Instruction 4630.8 (reference(iiii)), and CJCS Instruction 6212.01B (reference(jjjj)). (Pub. L. 104-106 (1996) (reference(kkkk)) and 44 U.S.C. 3506 (reference(c)))

C5.2.3.5.11.1. IT Design Considerations. Available mission area (i.e., joint mission area and/or business/administrative mission areas) integrated architectures shall be used to develop IT, including NSS, interoperability requirements. The Joint Operational Architecture and the JTA shall serve as the foundation for evolutionary development of these mission area integrated architectures. Mission area integrated architectures shall state IT, including NSS, interoperability requirements in a family-of-systems mission area context. The user shall derive IT, including NSS, family-of-systems information exchange requirements (IERs) from the operational IERs of the mission area integrated architecture. During the requirements generation process, users shall develop interoperability KPPs in accordance with DoD Directive 4630.5 (reference(hhhh)), DoD Instruction 4630.8 (reference(iiii)), CJCS Instruction 3170.01B (reference(f)), and CJCS Instruction 6212.01B (reference(jjjj)) for all CRDs and ORDs. The DoD Components shall incorporate the IERs into the C4ISP (see Appendix 5).

C5.2.3.5.11.2. DoD Joint Technical Architecture (JTA). Implementation of the JTA is the use of applicable standards cited as mandated in the JTA. The implementation of the JTA is required for all new, or changes to existing, IT, including NSS. If the use of a JTA-mandated standard will negatively impact cost, schedule, or performance, a DoD CAE or cognizant OSD PSA may grant a waiver from use. For mission critical or mission essential programs, all granted waivers shall be submitted through ASD(C3I)/DoD CIO to USD(AT&L) for review. If no response is received within 2 weeks of the date of receipt, concurrence can be